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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/522,604	01/26/2005	Masahiro Harada	2004-2027A	1652

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EXAMINER	
YOUNG, NATASHA E	
ART UNIT	PAPER NUMBER
1797	
MAIL DATE	DELIVERY MODE
12/10/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)
	10/522,604	HARADA ET AL.
	Examiner	Art Unit
	Natasha Young	1797

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 January 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 January 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *01/26/2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

The abstract of the disclosure is objected to because the abstract should be one paragraph in length. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Borsboom et al (US 4,981,661).

Regarding claim 1, Borsboom et al teaches a COS treatment apparatus for a gasified gas containing H.sub.2S, H.sub.2O, O.sub.2, and CO, which comprises an O.sub.2 removal catalyst and a COS conversion catalyst located on the downstream side of a gasified gas flow with respect to said O.sub.2 removal catalyst (see Abstract; figure 1; and column 5, lines 49-56).

Regarding claim 5, Borsboom et al teaches a COS treatment method for a gasified gas containing H.sub.2S, H.sub.2O, O.sub.2, and CO, which comprises a first step of removing O.sub.2 by reaction with H.sub.2S and CO, and a second step of converting COS to H.sub.2S catalyst (see Abstract; figure 1; column 2, lines 39-55; and column 5, lines 49-56).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 2-4 and 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Borsboom et al (US 4,981,661) in view of Srinivas et al (US 6,099,819).

Claim 2 depends on claim 1 such that the reasoning used to reject claim 1 will be used to reject the dependent portions of the claim.

Regarding claim 2, Borsboom et al teaches an O.sub.2 removal catalyst (see Abstract).

Borsboom et al does not teach that said O.sub.2 removal catalyst is a TiO.sub.2 catalyst carrying Cr.sub.2O.sub.3 or NiO.

Srinivas et al teaches an O.sub.2 removal catalyst is a TiO.sub.2 catalyst carrying Cr.sub.2O.sub.3 or NiO (see Abstract and column 3, line 55 through column 6, line 2).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the teachings of Borsboom et al with the teachings of Srinivas et al to provide a catalyst to remove oxygen without being poisoned by H.sub.2S (see Srinivas et al column 3, line 55 through column 6, line 2).

Claim 4 depends on claim 2 such that the reasoning used to reject claim 2 will be used to reject the dependent portions of the claim.

Regarding claim 4, Borsboom et al teaches a COS treatment apparatus wherein said O.sub.2 removal catalyst is located in a higher-temperature region with respect to said COS conversion catalyst (see column 2, lines 39-55).

Regarding claim 3, Borsboom et al teaches a COS treatment apparatus for a gasified gas containing H.sub.2S, H.sub.2O, O.sub.2, and CO, which comprises a TiO.sub.2 and Cr.sub.2O.sub.3 catalysts (see column 1, line 67 through column 2, line 23).

Borsboom et al does not teach a COS treatment apparatus for a gasified gas containing H.sub.2S, H.sub.2O, O.sub.2, and CO, which comprises a TiO.sub.2 catalyst carrying Cr.sub.2O.sub.3.

Srinivas et al teaches the conversion of COS to H.sub.2S with a TiO.sub.2 catalyst carrying Cr.sub.2O.sub.3 (see Abstract; column 3, line 55 through column 6, line 2; column 15, lines 34-38).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the teachings of Borsboom et al with the teachings of Srinivas et al to provide a catalyst to remove oxygen without being poisoned by H.sub.2S (see Srinivas et al column 3, line 55 through column 6, line 2).

Claims 6-8 depend on claim 5 such that the reasoning used to reject claim 5 will be used to reject the dependent portions of the claims.

Regarding claim 6, Borsboom et al teaches a COS treatment method where a catalyst is used in the first step, which in oxygen removal.

Borsboom et al does not teach a TiO.sub.2 catalyst carrying Cr.sub.2O.sub.3 or NiO is used in said first step.

Srinivas et al teaches a TiO.sub.2 catalyst carrying Cr.sub.2O.sub.3 is used in oxygen removal (see Abstract and column 3, line 55 through column 6, line 2).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the teachings of Borsboom et al with the teachings of Srinivas et al to provide a catalyst to remove oxygen without being poisoned by H.sub.2S (see Srinivas et al column 3, line 55 through column 6, line 2).

Regarding claim 7, Borsboom et al teaches a COS treatment method using TiO.sub.2 and Cr.sub.2O.sub.3 catalysts (see column 1, line 67 through column 2, line 23).

Borsboom et al does not teach a COS treatment method wherein a TiO.sub.2 catalyst carrying Cr.sub.2O.sub.3 is used.

Srinivas et al teaches a COS treatment method with a TiO.sub.2 catalyst carrying Cr.sub.2O.sub.3 (see Abstract; column 3, line 55 through column 6, line 2; column 15, lines 34-38).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the teachings of Borsboom et al with the teachings of Srinivas et al to provide a catalyst to remove oxygen without being poisoned by H.sub.2S (see Srinivas et al column 3, line 55 through column 6, line 2).

Regarding claim 8, Borsboom et al teaches a COS treatment wherein said first step is performed at a higher temperature with respect to said second step (see column 2, lines 39-55).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Natasha Young whose telephone number is 571-270-3163. The examiner can normally be reached on Mon-Thurs 7:30am-6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Walter Griffin can be reached on 571-272-1447. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

NY

WALTER D. GRIFFIN
SUPERVISORY PATENT EXAMINER